Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

flower is the important organ, that seed plants are the *real* plants, and ferns, mosses, and toadstools very much of a side issue?

And then we *do* wish that the pernicious comparison of spores and seeds had not been perpetuated. If Professor Bailey had been condemned for ten years to eradicate from elementary pupils' minds the idea that a seed when it germinates produces a new plant, and to inculcate a true idea of the relation between seed and spore, he would thoroughly appreciate this desire.—C. R. B.

An organography of the higher plants.

A WELCOME BOOK is the recently published treatise on the general organography of plants by Professor Dr. Goebel of Munich.[8] No one who has given attention to the shifting of the point of view of progressive morphologists can fail to observe that the problems in this field are now seen in an entirely new light. No longer is there presented to the student the conception of an ideal leaf or flower, from which, as from a "pattern," those he observes show "deviations" more or less marked, for which no conceivable reason is assigned except the production of "variety in nature." On the contrary, he is set to study the forms of organs as they exist and to seek in external and internal conditions as they influence hereditary "tendencies" (alas, our ignorance!) the efficient causes for the forms he observes. The old idealistic theory of metamorphosis is giving ground to more realistic views of development as we become able to get closer to the plant. It is plain that modern morphology must base itself upon physiology and ecology.

But these exacter views are as yet in their formative stage, and many who are not specialists are scarcely aware of the departure in current literature from the older standpoint. To these, and to the specialist as well, the gathering together of these newer ideas into a compact discussion will be of great service. The present volume is only the first, or general part, to be followed presumably by a second, treating of special morphology, a work which we hope will not be long delayed, spite of the fragmentary character of the available materials. In order to show the nature of the general part we here translate the principal headings:

Section I. The general segmentation of the plant body: morphology and organography, classification of the organs of seed plants, formation of organs and division of labor among lower plants (thallophytes), normal formation of organs at the growing point and regeneration, coalescence (*Verwachsung*) and dwarfing. *Section II.* Symmetry: positions of organs on radial axes, dorsiventral shoots, symmetry of leaves, symmetry of flowers and inflorescences. *Section III.* Differences in the formation of organs at different stages of development; young forms. *Section IV.* Malformations and their significance for organography: how malformations arise, significance of malformations for the theory of formation of organs. *Section V.* Influence of correlations and external stimuli upon form.

---

[8] GOEBEL, K.—Organographie der Pflanzen, insbesondere der Archegoniaten und Samenpflanzen. Erster Teil: Allgemeine Organographie. 8vo. pp. x+232. *figs. 130.* Jena: Gustav Fischer. 1898. *M.* 6.

These topics are treated in a clear and concise manner, in German which it is a pleasure to read. If any parts be selected as instructive above others, they would be, in our judgment, the fourth and fifth sections, in which the author discusses the relation of teratology to organography and the formative influence of external stimuli.

In the former, after pointing out the impossibility of an exact definition of abnormalities as distinguished from variations, he shows that monstrosities are not lawless, since the fundament (*Anlage*) of a shoot is never misdeveloped into a leaf or root, nor a sporangial fundament into a vegetative organ. For when stamens or carpels are malformed, it is always the nutritive parts which are developed, while the sporangia are dwarfed. Such structures are not reversionary in the least, but are due to pathological disturbances, and cannot lead to any correct phylogenetic conclusions. Malformations in general, Goebel holds, are either inherited (of which he cites numerous examamples), their development at any particular time, however, being often coupled with the action of external conditions, in whose absence they persist as latent fundaments; or the external factors are the causal impetus of malformations, especially in the lower plants, though examples among seed plants are not wanting. The study of monstrosities leads to the conclusion that Sachs' theory of "Stoff und Form" is the most satisfactory one, *i. e.*, that differences in the forms of organs are due to differences in the plastic materials.

In discussing correlations the author points out two general categories: one, which he calls quantitative correlation, depends on the competition between the fundaments of different organs, which determines the extent of development of the organ; the other, qualitative, influences direction of growth and the form of organs such as thorns, sporophylls, bud scales, and tendrils. In discussing the influence of external stimuli many interesting effects of gravity, light, medium, and mechanical stimuli are cited, of which no outline would convey an idea.

In any attempt to get out of a rut, the very effort is likely to carry one beyond the middle of the road. To this we must ascribe Goebel's objection to the use of the term "leaf fundament" (*Blattanlage*) on the ground that, as the idea "leaf" is a mere abstraction, there can be no such thing as a leaf fundament, but only fundaments of foliage leaves, scale leaves, etc. In support of this general position he argues that if the theory of metamorphosis had started with the examination of roots instead of leaves, it would not have been led into such vagaries, or have generalized the concept "root" until nothing remained but an abstraction. Botanists would have more clearly recognized that function determines form. But however clearly we recognize now this fact, and however improved become our views of morphology in consequence, it is improbable that categories of homologous organs will cease to demand recognition in our thought and in our terminology.

In a somewhat similar way the author constructs men of straw out of the categories caulome, trichome, etc., and charges them so impetuously that his momentum carries him beyond safe middle ground to untenable positions. So completely has he taken the physiological point of view, that he prefers to base terminology upon analogy, even when he acknowledges that it obscures homologies. This may do for popular speech, but it ought not to continue and cannot long persist in scientific language.

Though every reader may not be able to go the full length with Professor Goebel, it is manifest that he has produced a most useful and stimulating treatise on the organography of plants, which no one who cares to keep abreast of modern views can neglect.—C. R. B.

MINOR NOTICES.

DR. CHARLES F. MILLSPAUGH[9] has published a third contribution to our knowledge of the flora of Yucatan. The Schott herbarium recently obtained, the Witmer Stone collection of 1890 under the auspices of the Academy of Natural Sciences of Philadelphia, the E. P. Johnson collection of 1848 (examined at the herbarium of Columbia University), and the continued collections of Dr. Geo. F. Gaumer, have furnished much material not reported heretofore. Sixteen new species are described.—J. M. C.

TWO USEFUL bibliographical works have recently reached us. One is from the U. S. Department of Agriculture; a library bulletin containing a "Reference list of publications relating to edible and poisonous mushrooms." It has been compiled by Miss Josephine A. Clark, the assistant librarian, to whom botanists are already under obligations for her card index of new species and illustrations. This bulletin seems to have been called out by the of poisoning some prominent persons at Washington lately through eating amanitas. The list contains 306 titles.

The other bibliography is a list of periodicals relating to botany in the New York public library and the library of Columbia University, and also a list of those relating to horticulture and gardening in the same libraries. This 11-page pamphlet reaches us "with the compliments of Lucien M. Underwood," but bears neither imprint nor indication of who its compiler may be. This, however, will not interfere with its usefulness—.C. R. B.

[9] Contribution III to the coastal and plain flora of Yucatan. Field Columbian Museum Publication 25. Botanical Series 1:345–410. 1898.